the apparent ends of the branches, hence we are justified in considering them the real nerve terminations.

The last pages of the book detail three observations made after the section of the sciatic nerve of rabbits. It was found that the degenerative changes, especially the fragmentation of the myeline, occurred earlier in the nerves near their termination than in the trunk. Ranvier seeks the cause in the shortness (and thinness) of the interannular segments, at the periphery of the nerve; since the changes depend on the activity of the cellular elements, they must progress the more rapidly the more there are of them in a given length. Probably there exist also differences in the nutritive supply of the nerve in the trunk and in the periphery. Twenty-four hours after the nerve section the nuclei of the nerve eminence were found enlarged, proving that they participate in the exaggerated activity of the protoplasm and nuclei of the nerve itself.

The object of this review was to abstract mainly those original observations, which have not yet passed into current literature. But apart from the wealth of new discoveries, the book is a mine of information both as to modes of research, and the results obtained. The style could not be excelled in clearness, and the plates, corresponding faithfully to the original slides, as the writer can testify, deserve the same praise. Perhaps the gravest fault to be found in the work is the scarcity of microscopic measurements. H. GRADLE.

IV.—LOCALIZATION IN BRAIN DISEASE.

LECTURES ON LOCALIZATION OF DISEASES OF THE BRAIN. By J. M. Charcot. Edited by Bourneville. Translated by Edward P. Fowler, M. D., New York. William Wood & Co., New York, 1878. Pp. 133.

This attractive little volume, composed of twelve lectures, introductory to his course in the faculty of medicine in Paris, are by the distinguished chief of the division for nervous affections, at the Salpêtrière—Professor Charcot. They have been already published, in part at least, in the *Progrès Médical*, a Parisian journal edited by Dr. Bourneville (a pupil of Charcot), who charged himself with the duty of reporting and publishing them in France. These lectures were delivered at the opening of the course of instruction of the past year, and now appear for the first time in the English language.

Dr. Charcot is well known everywhere, among those interested in the study of nervous diseases, or who have at heart the true interests of scientific medicine. He is a good example, among living physicians, of a well balanced investigator, fairly comprehensive in knowledge, practical in aim, sound in judgment, simple in method, and capable not only of just and penetrating observation, but of safe generalization. Even his recent serious investigations into so unsubstantial a subject as *metallo-therapy* at the Salpêtrière, singular as they may seem to be at a distance, do not require us to modify our judgment. Dr. Charcot is possessed evidently of a sound and versatile, though not a brilliant mind, one which does not incline him greatly to the paths of speculation, but rather to facts, and to inductions which do not wander far from their bases. Hence his writings, while clear, and their style free and direct, are not discursive nor voluminous.

Dr. Charcot draws in these studies, as in others, his materials from every available source — normal anatomy, experimental physiology, and clinical examinations, in his field of labor, giving special preference, very naturally and for good reasons as they seem to us to be, to clinical and pathological materials.

The attempt is made in these lectures to apply the doctrines of Hitzig, Ferrier and others to brain disease. His belief like theirs, is, that "the encephalon does not represent an homogeneous organ, a unit, but rather an association, or a confederation, composed of a certain number of diverse organs. To each of these organs belong distinct physiological properties, functions and faculties. Now, the physiological properties of each one of these parts being known, it becomes possible to deduce therefrom the conditions of a pathological state; this being of course but a greater or less modification of the normal state, and not a result of the intervention of new laws." (P. 3.)

The first lecture is chiefly devoted to certain plain, and for his purposes clear statements as to the general arrangements of parts in the internal structure, and external configuration of the brain. These and other lectures are elucidated by schematic drawings, which are a great help to the reader. The next two lectures are almost wholly given to a description of the structural and topographical anatomy of the cortex of the brain.

In the fourth lecture a parallel is drawn between spinal and cerebral lesions, with the very judicious purpose of applying our present knowledge of the localization of spinal disease, to a study of localized brain disease. The latter part of this lecture, and the fifth, sixth, seventh, eighth and ninth lectures are given to a study of the peculiarities of distribution of the blood-vessels to different parts of the brain, and to the effects of disease of the same on the brain structure proper. In this part of his course he follows after Duret and Heubner, in their independent and admirable researches into the vascular supply to the encephalon. This is one of the most suggestive parts of the book.

The tenth lecture, is devoted to: cerebral hemi-anæsthesia (continued from the ninth lecture,) crossed amblyopia, and lateral hemiopia.

The eleventh lecture is given to a very suggestive discussion as to the "origin of the cerebral portion of the optic nerves."

Finally the last lecture (twelfth) is devoted to "secondary degeneration," and its bearing on the question of localization. Due credit is given to Tuerck, of Vienna, through whose labors these "degenerations" were first brought to light.

Such is an outline of this remarkably instructive little book. We are only prevented from entering on an extended and critical analysis of its contents, by the fact, that nearly every phase of the subject has been discussed in one way or another, in the pages of our journal, since 1874, so that our readers are already so far acquainted with the matter of the lectures as to make an extended notice superfluous. But to all who desire a clear and easily comprehensible outline of the present state of cerebral pathology, especially as it bears on localization of function in the brain, and from the hand of a master—we can most heartily commend these lectures.

We bespeak for them a wide circulation among physicians on this side of the Atlantic. We would not close without saying that the somewhat thankless labor of the translator appears to be well done.

V.—FOTHERGILL: ANTAGONISM OF MEDICINES.

THE ANTAGONISM OF THERAPEUTIC AGENTS: AND WHAT IT TEACHES. The Essay to which was awarded the Fothergillian Gold Medal of the Medical Society of London for 1878. By J. Milner Fothergill, M. D., Edin. Philadelphia: Henry C. Lea, 1878. Chicago: Jansen, McClurg & Co.

A rational scientific therapeutics that shall redeem practice from the often reiterated and never satisfactorily answered charge of empiricism is one of the greatest desiderata of medicine. It is to meet this want that so many hasty generalizations and half truths have been enounced to form the basis of systems of more or less thoroughly developed quackery. Men are taken with even a pretense of scientific system, and so much has this been the case that an educated empiricism in the best sense of the word has almost been the sole refuge of those who were capable of estimating the real merits of the various so-called schools of medical practice. But empiricism has not been absolutely the sole resource of true physicians; thanks to honest research in physiology and pathology, some general, if not universal, principles have been reached, and therapeutics is becoming less purely empirical every day. The little volume before us is an evidence of this fact: it is a treatise on scientific physiological therapeutics, such as might be expected from the well known reputation of its author.